Declaration of Conformity

Operating Instructions

Mounting Instructions

Spare Part List

UK

HE-VA MULTI-SEEDER -
Pneumatic Fine Seeder

Contents

Declaration of Conformity **2**

1. Delivery Check **3**

2. Operating Instructions
2.1 Basic adjustment before filling in the seeds **3**
2.2 Changing of the dosing-roll **3**
2.3 Switching on and switching off the agitator **4**
2.4 Test turning **4**
2.5 Sowing in the field **4**
2.6 Emptying of the fine seed hopper **4**
2.7 Maintenance **4**
2.8 Additional Equipment **5**
2.8.1 Retaining seed plate for the dosing-roll **5**
2.8.2 Hectare counter **5**
2.8.3 Seed-Controller – Operating Instructions **5**
2.8.3.1 Signification of the stated Numbers and Letters in the display **6**
2.8.3.2 Function of the Keys **6**
2.8.3.3 Input of required values (wheel circumference, working width) **7**
2.8.3.4 Electrical adjustment of the seed rate (additional equipment) **8**
2.8.3.5 Maintenance / Power supply **8**
2.8.3.6 Connection Diagram – Junction Box **9**

3. Mounting Instructions **10**
3.1 Mounting of the Pneumatic Fine Seeder **10**
3.2 Distribution plates **10**
3.3 Driving wheel **10**

4. Spare Part List – Pneumatic Fine Seeder **11**
4.1 Fine Seeder **11**
4.1.1 Fine seed hopper **15**
4.1.2 Mechanical Fan **17**
4.1.3 Hydraulic Fan **19**

5. Test turning scale **21**
5.1 Test turning **21**
5.2 Changing of the dosing-roll **21**
5.3 Maintenance **21**

6. Adjusting scale **22**

7. Notes **23**

DS/EN 45 014

Declaration of Conformity

HE-VA ApS
N.A. Christensensvej 34
DK-7900 Nykøbing Mors

hereby declares that the following product:

MACHINE : **Pneumatic Fine Seeder**

TYPE : **HE-VA MULTI-SEEDER**

as covered in this declaration, conforms with the stipulations of Directive 98/37EC (on Machines) with later amendments.

Managing Director Villy Christiansen

HE-VA ApS

……
Signature

……
Date

HE-VA ApS, N. A. Christensensvej 34 DK-7900 Nykøbing Mors

1. Delivery check

Please check the Fine Seeder for any damages. Check the wires, air hoses and the hydraulic hoses, if any, for cut or pressure damages. Moreover, you have to ensure that all parts are delivered with the Fine Seeder.

2. Operating Instructions

2.1 Basic adjustment before filling in the seeds

Before filling in the seeds, you have to check if there is the correct dosing-roll in the machine and that the stroker above the dosing-roll is adjusted to the right grain size.

The dosing-roll with the black dosing units is suitable for:	The dosing-roll with the red dosing units is suitable for:
Grass mixtures, rye barley wheat, sun-flower, vetch-/oats-mixture with peas etc. (in general big volumes/quantities).	Clover, rape, phacelia, granular seeds, snail grains etc. (in general small volumes/quantities).

Beside these two serial dosing-rolls, we can offer you further rolls for other seed types or rows.

The stroker above can be adjusted exactly by the lever.

The stroker distance to the dosing-roll can be read on the scale by the lever:

1st slot 0 mm
2nd slot 1 mm
3rd slot 2 mm
4th slot 3 mm
5th slot 4 mm
etc.

The basic rule:

The distance between the stroker and the dosing-roll is to be half of the seed's large grain size, for instance:

Rape	-1 mm
Rye	2 – 3 mm
Grass-mixtures	2 – 3 mm
Vetch-/oats-mixtures with peas	3 – 4 mm

2.2 Changing of the dosing-roll

Remove the bearing plate for the dosing-roll by loosening the two finger screws. Then remove the cover plate by pulling up the spring-loaded pressure screw. While pulling out the dosing-roll turn it a little bit to the left hand side. **Attention: Please do not handle to strong.**

Before you put in another dosing-roll, please remove all seed rests in the fine seed hopper. The spring-loaded seal discs on the dosing-roll's side may not be fixed. When mounting the dosing-roll, it must be possible to push it gently over the shaft.

2.3 Switching on and switching off the agitator

The agitator should only be used with seed types which can adhere. To do this you have to pull out and to stick in the spring plug out of the hollow shaft behind the seed rate adjusting lever.

2.4 Test turning

For turning please remove the cover plate by pulling up the spring-loaded pressure screw. Then the test turning plate with the 7 slots is placed below the dosing-roll and the test turning tray is then placed below the test turning plate. Depending on the working width please turn the driving wheel x times to achieve the seed rate for 1/10 ha (see scale under the cover of the fine seed hopper + page 21). Turn the driving wheel as fast as it will turn in actual use in the field. If you cannot achieve the desired seed rate you need to slide the seed rate adjusting lever up (Saatmenge +) or down (Saatmenge -), and a new test turning is performed until desired seed rate is achieved.

2.5 Sowing in the field

While sowing the fan should always be switched on. **Attention: There is always a delay from the operation of the dosing roll to the falling down of the seed.**

2.6 Emptying of the fine seed hopper

For emptying of the fine seed hopper you must mount the test turning plate. Put the stroker in the top position and turn the seed rate adjusting lever to maximum. Please turn out the remaining seed by the driving wheel. For a complete emptying you can additionally pull out the dosing-roll and the fine seed hopper is cleaned with air.

2.7 Maintenance

The bearing at the driving wheel has to be greased every day. From time to time please clean the fan with compressed air. You have to anoint the chain from the gearbox to the dosing roll and the chain tightener is adjusted as required. To do this, you have to place the seed rate adjusting lever on top of the adjusting scale. Pull out the spring plug on the agitator. Then loosen the 2 M6-nuts, the wing screw and finally remove the cover. Then you can swing down the gearbox cover. **Attention: The chain should not be stretched too much**. The proper adjustment gear unit (grey box) **does not need** maintenance.

2.8 Additional Equipment

2.8.1 Retaining seed plate for the dosing-roll

There is a retaining seed plate available for the fine seed hopper which prevents special seed types from adhering. The result of the retaining seed plate is that only so many seeds or granulates fall into the dosing-roll as the dosing roll brings out (e.g. phacelia, fertilizer, granulates). For all other seeds the retaining seed plate has to be dismantled or placed in the top position.

2.8.2 Hectare counter

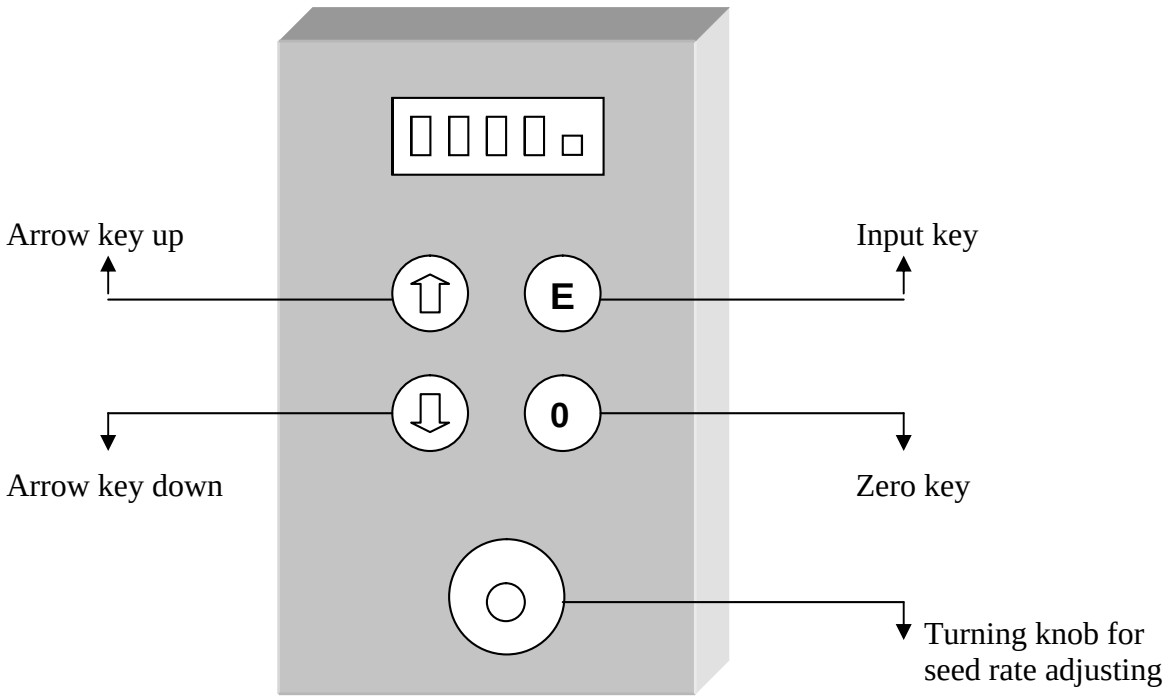
Please mount the hectare counter on the three designated boreholes. First fill in the long shaft into the big borehole and then push the throw-out lever on the shaft. Then you have to put the shaft in a designated borehole. Adjust the throw-out lever so that a secured counting is guaranteed.

To calculate the area you have to divide the number on the hectare counter by the proportional number from the test turning scale (see scale under the cover of the fine seed hopper + page 21). Then you have the area in ha.

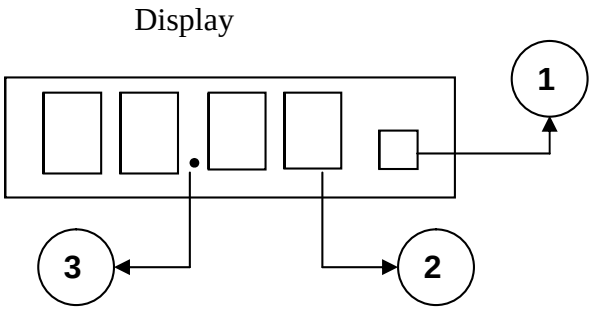
For example: On the hectare counter you find the number 720.
Working width of the machine is 3 m.
According to the scale under 3 m you find the number 220.

So you have to divide 720 : 220 = 3,273 x 1/10 ha = 0,33 ha

2.8.3 Seed-Controller – Operating Instructions



2.8.3.1 Signification of the Numbers and Letters in the display



1 Indication of Functions

E	Partial ha (deletable), max. 999.9 ha
t	Total ha (not deletable), max. 9999 ha
L	Working width in m, max. 25.5 m
r	Wheel circumference in m, max. 2.55 m
Stop A	Shaft for dosing-roll stopped (chain broken, seed rate adjusting lever set to zero) Alarm not deletable. Area is no longer counted.
Stop G	The fan is not running (seed hoses clogged, light control sensor heavily fouled). The alarm may be reset by pressing the key 0. However, the display will still show STOP and the area will still be counted if you continue driving.

2 Alarm for level in the fine seed hopper

A flashing line will be visible together with an alarm when the seed level in the fine seed hopper falls, below the sensor level. The tone may be reset on the Zero key. The flashing will continue until the seed is refilled.

3 Full Stop Indication

The full stop will be visible in connection with area measurement. Before the full stop, the ha is displayed. In connection with input of wheel circumference or working width, the metres are displayed before the full stop.

2.8.3.2 Function of the Keys

⇧ Arrow key up

The functional displays may be modified by activating the Arrow key. In connection with input of wheel circumference or working width, the value stated may be increased (see input of required values).

Arrow key down

The functional displays may be modified by activating the Arrow key. In connection with input of wheel circumference or working width, the value stated may be reduced (see input of required values).

Zero key

Partial ha is deletable by means of the Zero key. To do this continue pressing one of the arrow keys until the partial ha is displayed. After that keep down the Zero key until a little c is visible. Now the partial ha is deleted and automatically transferred to total ha.

The alarm tone for the level in the fine seed hopper may be interrupted by pressing the Zero key.

NB: In case of an alarm tone due to a defect at the fan or due to clogged seed hoses (Stop G), the tone may be reset on the Zero key. In case of an alarm tone due to a stop of the shaft for the dosing-roll (Stop A), the tone cannot be stopped on the Zero key. The two-pole power supply socket shall be pulled out at first and the defect remedied.

Input key

This key is used to change the required input values (wheel circumference, working width).

2.8.3.3 Input of required values (wheel circumference, working width).

Wheel circumference:

Press several times on one of the arrow keys until the display shows r for wheel circumference. Then keep down the E key permanently and at the same time increase or reduce the stated value in metre on one of the arrow keys. After letting go of the E key, the new value will be stored automatically.

NB: In order to achieve a precise area measurement, the wheel circumference shall be checked or fixed precisely as a test in the field. The procedure is as follows: Place a visible indication on the driving wheel by means of adhesive tape or similar. In the field where the Fine Seeder shall work, you drive distance approximately corresponding to 25-50 wheel revolutions. Then measure the distance by a tape measure and divide by the number of wheel revolutions.

$$\frac{\text{Distance driven in m}}{\text{No. of wheel revolutions}} = \text{wheel circumference in m}$$

With a standard steel driving wheel the result of the wheel circumference shall be approximately 1,51 m.

Working width:

Press several times on one of the arrow keys until the display shows L for working width. Then keep down the E key permanently and at the same time increase or reduce the stated value in metre on one of the arrow keys. After letting go of the E key, the new value will be stored automatically.

2.8.3.4 Electrical adjusting of the seed rate (additional equipment)

The seed rate can be adjusted by means of the turning knob for the seed rate. The adjusting scale of the seed controller shall be in accordance with the scale of the Fine Seeder, i.e. when the value 20 is set on the turning knob, the seed rate adjusting lever on the Fine Seeder shall also be in position 20.

In order to achieve as high repetition accuracy as possible, it is recommended always to start the required position from zero.

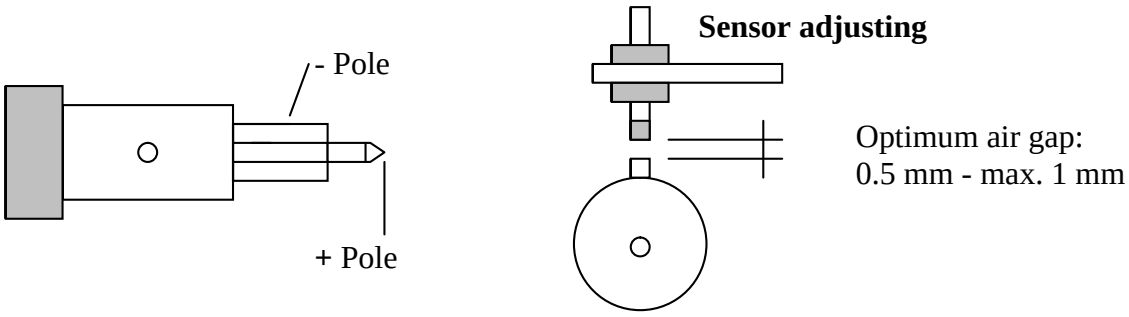
The seed rate adjusting lever on the Fine Seeder shall only function for monitoring. If the seed controller is switched off, the seed rate adjusting lever on the Fine Seeder may also be set manually. For this purpose the spring loaded button on the adjusting motor shall be pressed and then the seed rate adjusting lever may be set in the required position **NB**: **Do not use force.**

This manual adjusting possibility may be used in case of problems with the seed controller or in case of power supply failure.

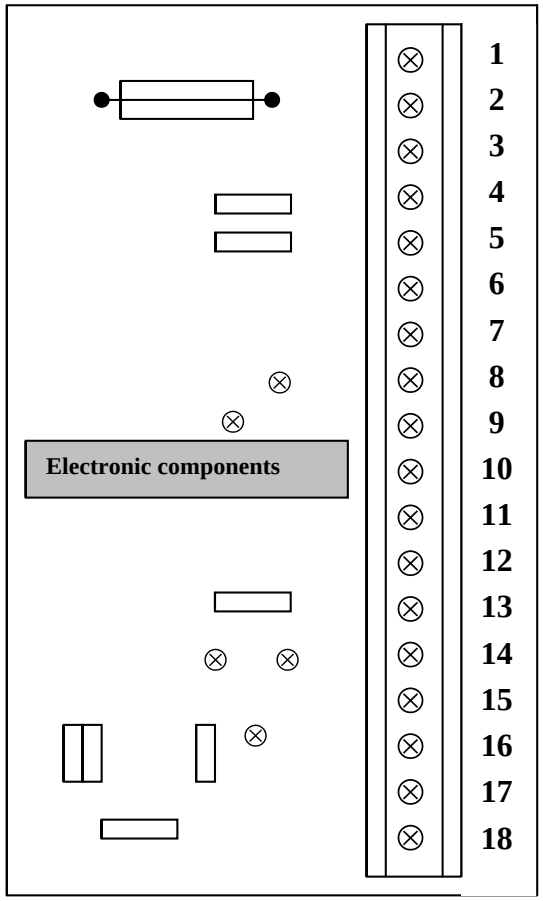
2.8.3.5 Maintenance / Power supply

The Seed-Controller shall be protected against moisture, dust, cold, heat, impacts and vibrations.

The Seed-Controller shall be connected to a 12 V supply. Observe the correct polarity.



2.8.3.6 Connection Diagram – Junction Box



1	+ 16 V Adjusting motor (red)
2	Control signal adjusting motor (white, No. 3)
3	+ 12 V Seed shaft sensor (brown)
4	+ 12 V Flex. driv. cable sensor, Fan, light cont. sens.-transmit.(brown)
5	Level light control sensor (brown)
6	Fan light control sensor-transmitter (brown)
7	Free
8	Free
9	Fan light control sensor (brown)
10	Seed shaft sensor (black)
11	Flexible driving cable sensor (black)
12	Free
13	Level light control sensor (white)
14	Negative free
15	Negative adjusting motor (black)
16	Negative fan light control sensor (white) / 2 pcs.
17	Negative flex. driv.cable sens.-and seed shaft sens.(blue)/2 pcs.
18	Negative level light control sensor (green)

Flexible driving cable sensor
brown = No. 4
black = No. 11
blue = No. 17

Seed shaft sensor
brown = No. 3
black = No. 10
blue = No. 17

Light control sensor - blower
Sensor with **perpendicular** cable connect. (transmitter)
brown = No. 4
white = No. 16

Sensor with **parallel** cable connection (receiver)
brown = No. 9
white = No. 16

Light contr. sens.–fine seed hopper level
brown = No. 5
white = No. 13
green = No. 18

Electrical seed rate adjusting
Motor cable
black = No. 15
red = No. 1
white = No. 2
white = No. 5 – not required (is to be isolated)

3. Mounting Instructions

Procedure:

3.1 Mounting of the Pneumatic Fine Seeder

Please mount the Fine Seeder in the middle of the basic machine, so that you easily can do the test turning. When seeding big quantities (up to 30 kg / ha) the hoses should be laid in an angle of inclination of 20 – 30° from the dosing-roll to the distribution plates. Hereby you prevent the seeds from stopping up. For the fastening of the hoses please loosen/tighten the holding plate for hose with the 2 wing screws on the under side of the aluminium-block.

3.2 Distribution plates

Please mount the distribution plates about 20 – 40 cm above ground. All 8 distribution plates are divided on the whole working width – 8 distribution plates for working width up to 6.30 m. With a working width from 6.3 m to 12.0 m, 8 double distributor units are to be mounted for use of 16 distribution plates. All 16 distribution plates are divided on the whole working width.

For example:	Working width 3 m	Working width 8.2 m
	3 m : 8 = 37.5 cm	**8.2 m : 16 = 51.25 cm**

The distance from middle distribution plate to middle distribution plate is therefore - in case of a basic machine of 3 m: 37.5 cm and - in case of a basic machine of 8.2 m: 51.25 cm. Place the first distribution plate half a distance away from the exterior part of the working width.

The distribution plates can also be adjusted with a pair of tongs in order to achieve an optimal distribution of seeds depending on the mounting height of the distribution plates. The spreading picture can be controlled on a concrete floor.

3.3 Driving wheel

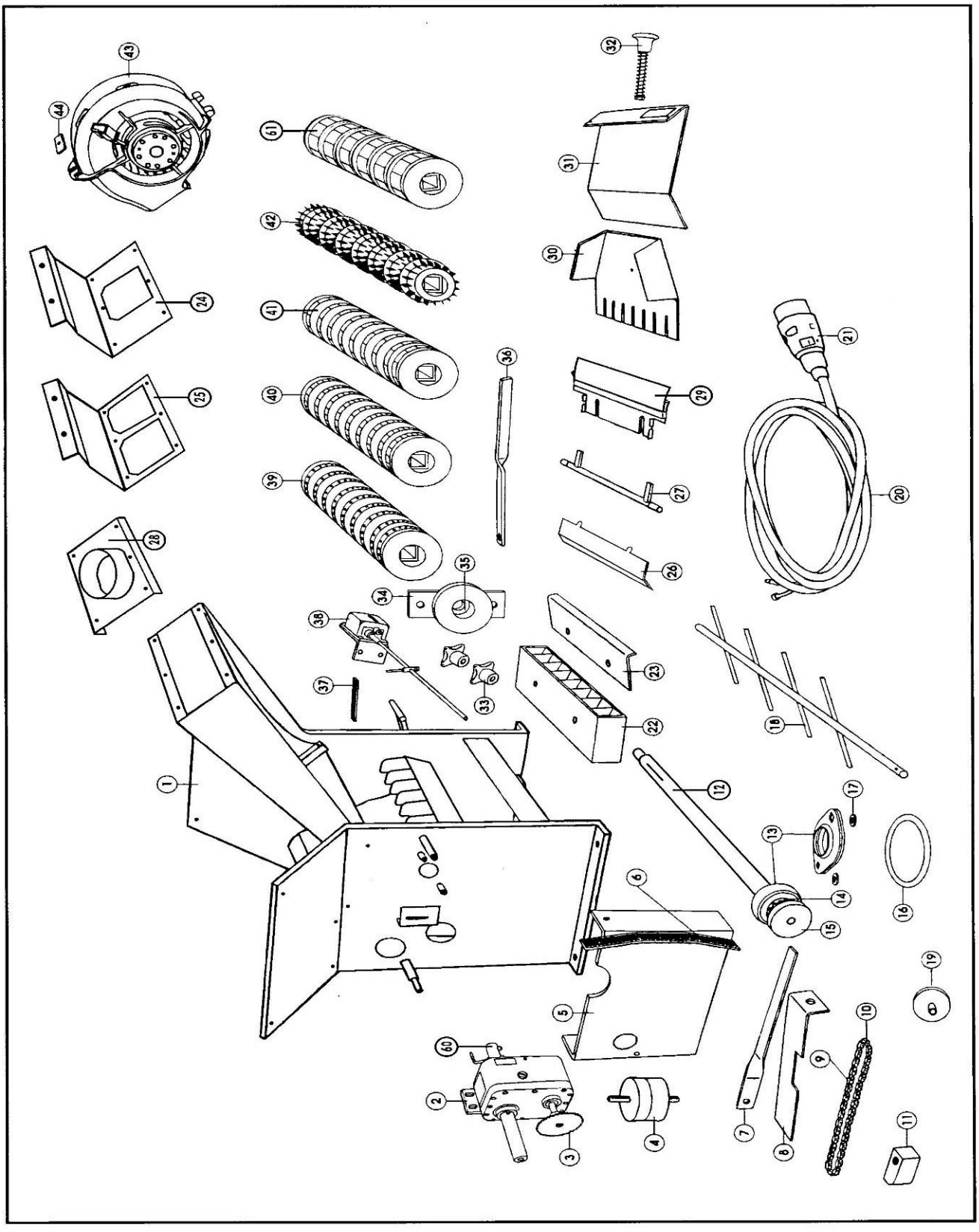
While you are working, the pivoting arm of the driving wheel is to be in a horizontal position. The lowest bending of the flexible driving cable = 30 cm.

Important:
The input shaft (the point where the flexible driving cable is connected) has to turn in an anti-clockwise direction (left turn).

4. Spare Part List – Fine Seeder

4.1. Fine Seeder

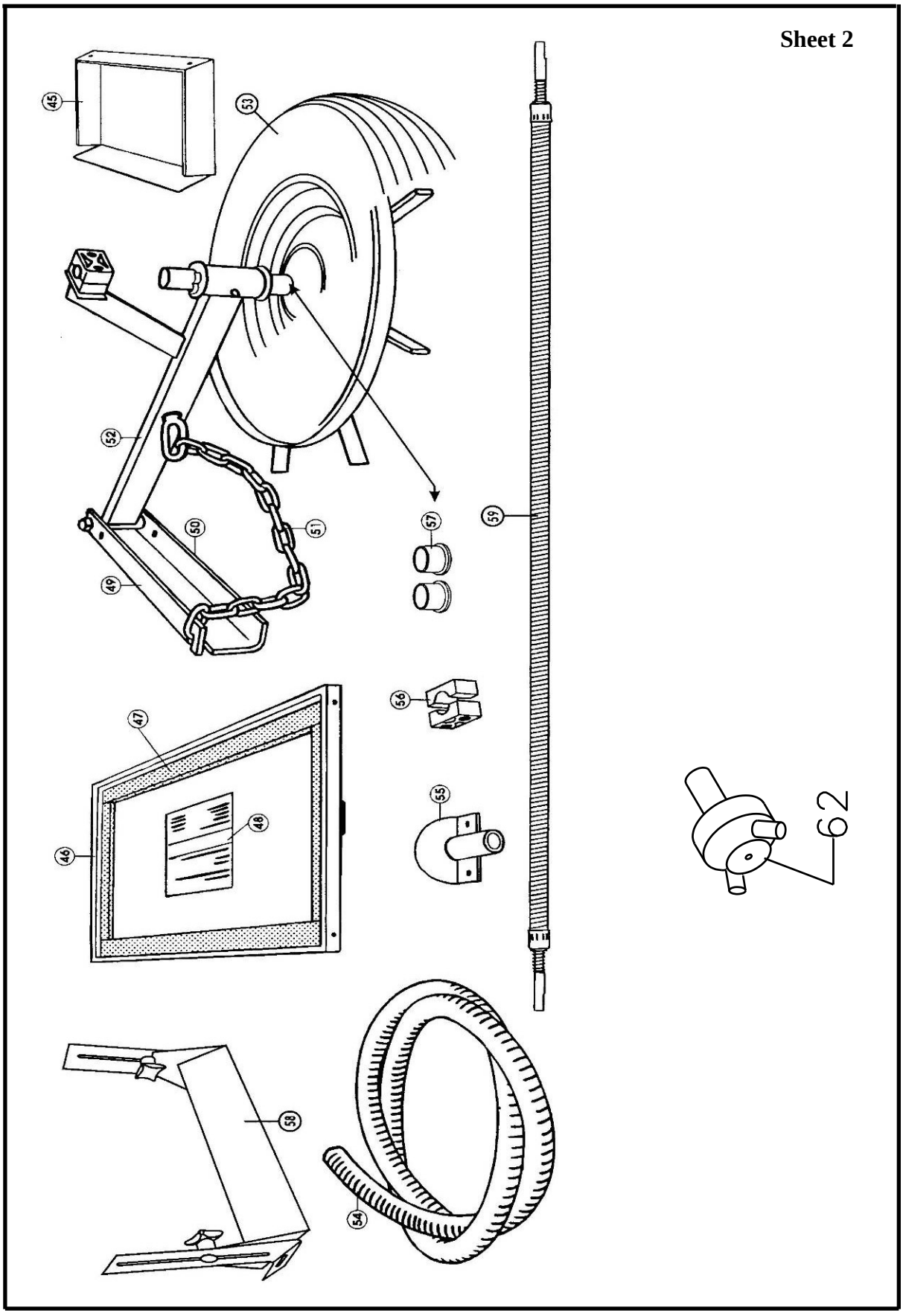
Sheet 1



Sheet 1

Pos.	Item number	Designation
1	0539000	Main frame
2	0539001	Gearbox
3	0539002	Chain wheel
4	0539003	Absorber
5	0539004	Safety quard for gearbox
6	0539005	Adjusting scale
7	0539006	Seed rate adjusting lever
8	0539007	Cover for safety guard
9	0539008	Chain
10	0539009	Chain locking device
11	0539010	Chain assembler
12	0539011	Shaft for dosing-roll
13	0530012	Bearing complete
14	0539013	Chain wheel
15	0539014	Pulley
16	0539015	O-ring
17	0539016	Spacer
18	0539017	Agitator
19	0539018	Pulley
20	0539019	Flexible driving cable complete
21	0539020	Plug female
22	0539021	Alu-blok with 8 outlets
23	0539022	Holding plate for hose
24	0539023	Adapter for 1 fan
25	0539024	Adapter for 2 fans
26	0539025	Attachment for stroker
27	0539026	Shaft for stroker
28	0539027	Adapter mechanical/hydraulic fan
29	0539028	Stroker
30	0539029	Test turning plate
31	0539030	Cover plate
32	0539031	Cover plate, complete
33	0539032	Finger screw
34	0539033	Bearing plate for dosing-roll
35	0539034	Bearing bush
36	0539035	Lever for stroker
37	0539036	Adjusting scale
38	0539037	Hectare counter
39	0539038	Dosing-roll (hole)
40	0539039	Dosing-roll (fine)
41	0539040	Dosing-roll (mean)
42	0539041	Dosing-roll (rough)
43	0539042	Electrical fan
44	0539043	Holding plate for fan
60	0539044	Clutch for flexible driving cable
61	0539045	Dosing-roll (rough blue)

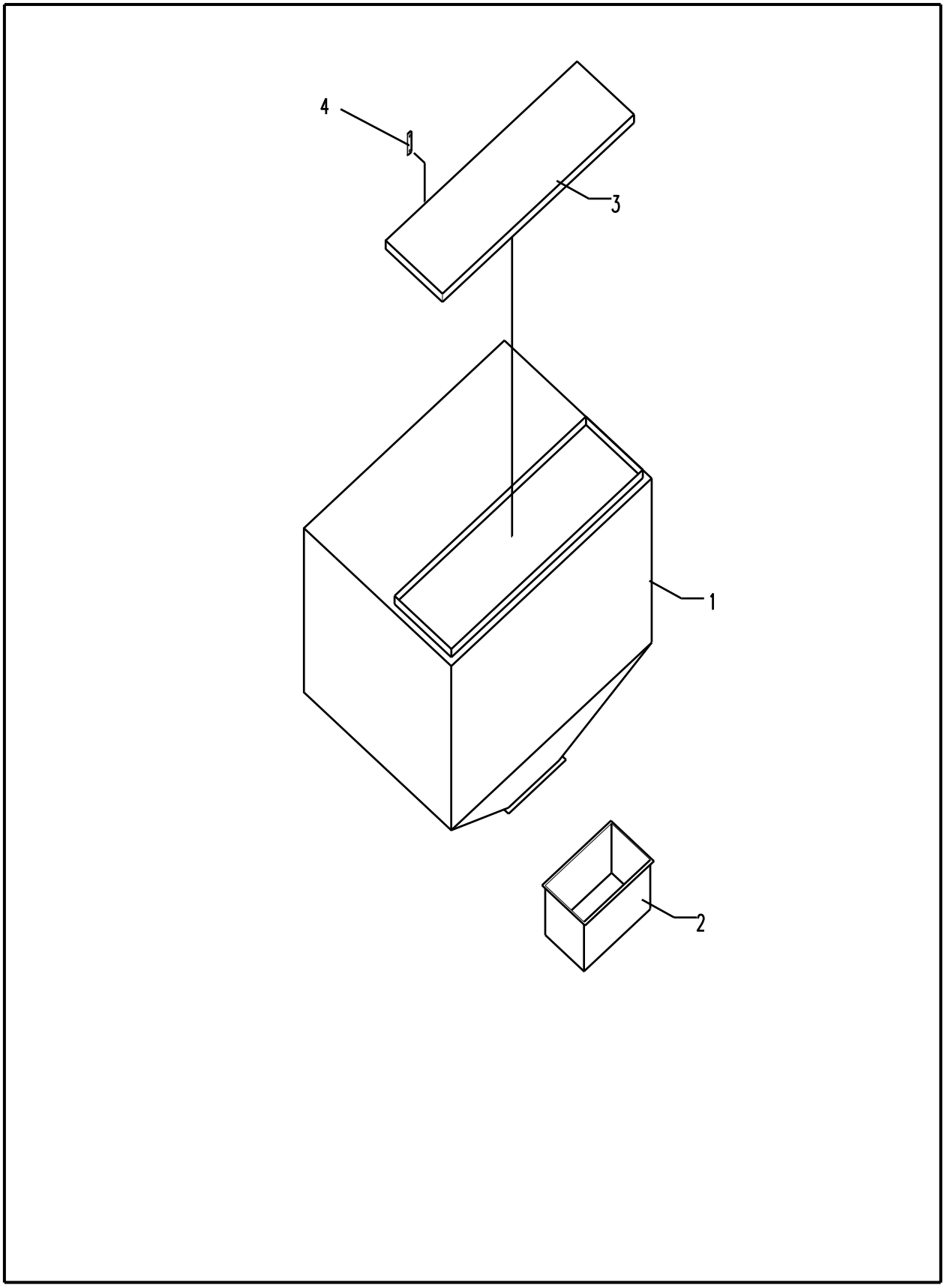
Sheet 2



Sheet 2

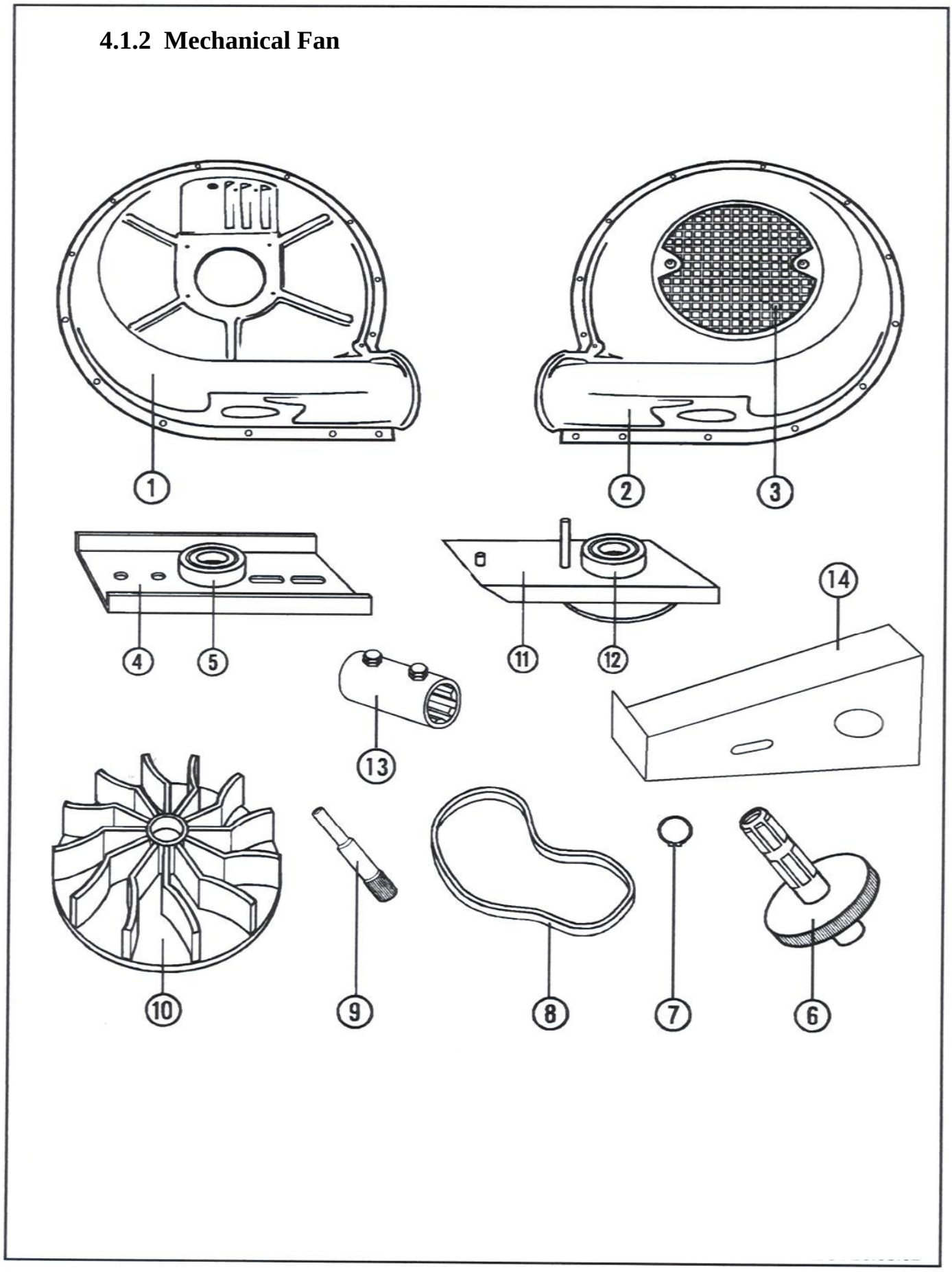
Pos.	Item number	Designation
45	0539046	Cover for fan
46	0539047	Cover for fine seed hopper
47	0539048	Sealing band
48	0539049	Test turning scale
49	0539050	Driving wheel, complete
50	0539051	Bracket for driving wheel
51	0539052	Suspension chain for driving wheel
52	0539053	Pivoting arm for driving wheel
53	0539054	Steel driving wheel – Rubber wheel
54	0539055	Hose
55	0539056	Distribution plate
56	0539057	Holding device for hose
57	0530058	Bearing bush
58	0539059	Retaining seed plate for dosing-roll
59	0539060 0539061 0539062 0539063 0539064 0539065	Flexible driving cable 1.5 m Flexible driving cable 1.8 m Flexible driving cable 2.1 m Flexible driving cable 2.5 m Flexible driving cable 2,75 m Flexible driving cable 3.0 m
62	0539097	Double distributor unit

4.1.1 Fine Seed Hopper



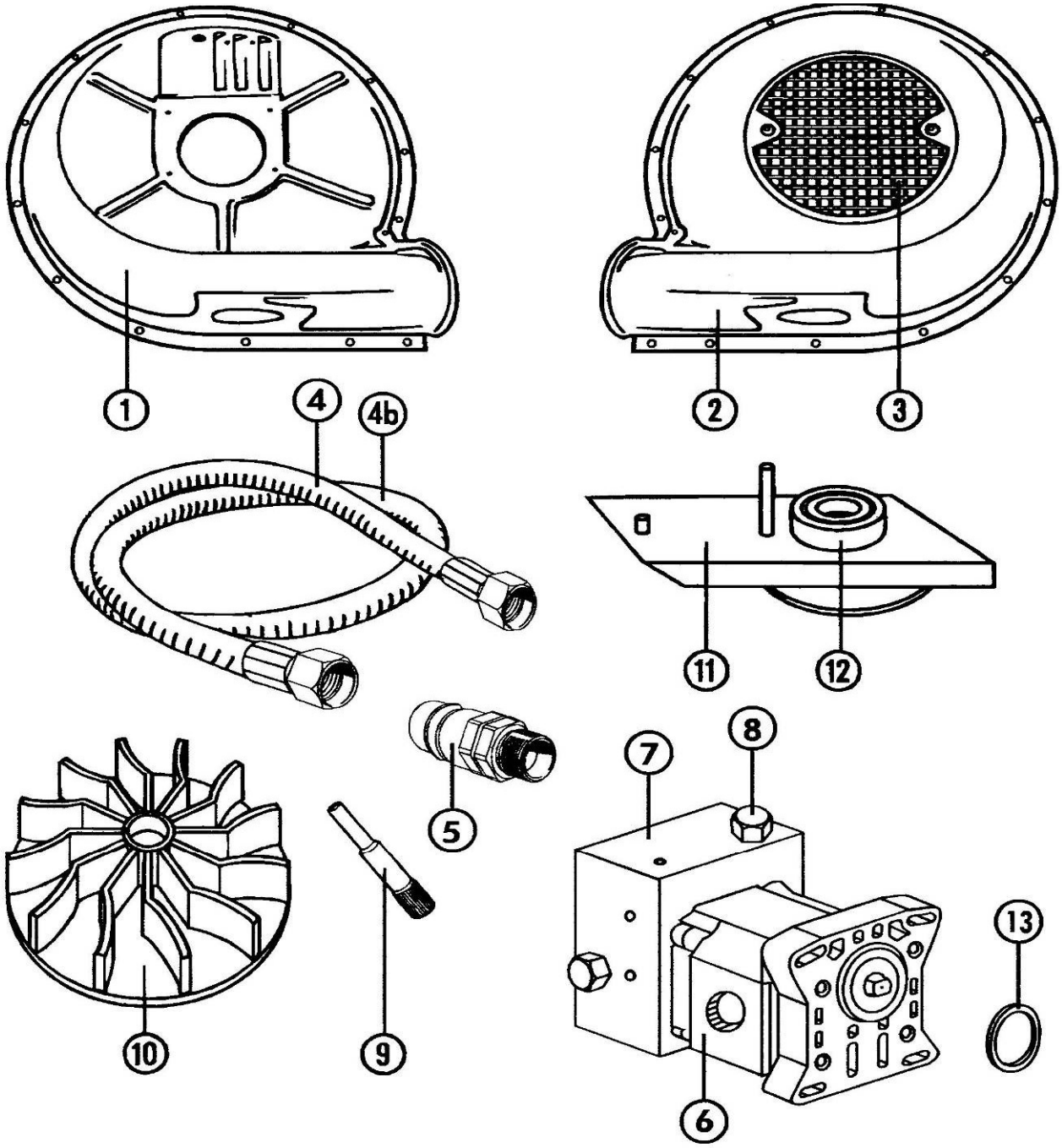
Pos.	Item number	Designation
1	0539094	Fine seed hopper, 190 L
1	0539098	Fine seed hopper, 330 L
2	0539095	Test turning tray
3	0539047	Cover for fine seed hopper
4	0539096	Hinge

4.1.2 Mechanical Fan



Pos.	Item number	Designation
1	0539066	Fan-housing interior
2	0539067	Fan-housing outer
3	0539068	Safety net
4	0539069	Bracket for driving shaft
5	0539070	Bearing for driving shaft
6	0539071	Shaft with pulley
7	0539072	Locking ring
8	0539073	Belt
9	0539074	Shaft for fan
10	0539075	Fan wheel
11	0539076	Bracket for fan
12	0539077	Bearing
13	0539078	Reducer
14	0539079	Safety quard for belt

4.1.3 Hydraulic Fan



Pos.	Item no.	Designation
1	0539080	Fan-housing interior
2	0539081	Fan-housing outer
3	0539082	Safety net
4	0539083	Hydraulic hose (pressure)
4b	0539084	Hydraulic hose (return)
5	0539085	Quick coupling male
6	0539086	Hydraulic motor
7	0539087	Valve block
8	0539088	Valve for oil control
9	0539089	Shaft for fan
10	0539090	Fan wheel
11	0539091	Bracket for fan
12	0539092	Bearing
13	0539093	Sealing ring

5. Test Turning Scale

Attention: The cover must be closed air tightly while sowing!

Rollers - Working width m	2.60	3.00	3.30	3.70	4.00	4.10	4.50	5.40	6.30	7.30	8.20	9.50	10.20	12.20
Turns with the driving wheel to achieve 1/10 ha	254	220	200	179	165	161	147	122	105	90.5	81.5	69.5	64.8	54.1

DR-Weeder – Working width m	3.00	4.50	6.00	7.50	9.00	12.00
Turns with the driving wheel to achieve 1/10 ha	220	147	110	88.1	73.4	55.0

Mega-Dan – Working width m	2.60	3.00	3.85	4.70	5.50
Turns with the driving wheel to achieve 1/10 ha	254	220	172	141	120

Disc-Roller – Working width m	3.00	4.00	5.00	6.30	8.00
Turns with the driving wheel to achieve 1/10 ha	220	165	132	105	82.6

5.1 Test turning

At first adjust the stroker above the dosing-roll to the right grain size (1/2 grain size: e.g rape -1 mm, grass-mixtures 2 - 3 mm, cereals 3 - 4 mm etc.; see instructions). For turning please remove the cover plate. Then put the test turning plate with the 7 slots below the dosing-roll and place the test turning tray below the test turning plate. Depending on the working width please turn the driving wheel x times to achieve the seed rate for 1/10 ha (see the above scale). Turn the driving wheel as fast as it will turn in actual use in the field. If you cannot achieve the desired seed rate you need to slide the seed rate adjusting lever up (Saatmenge +) or down (Saatmenge -), and a new test turning is performed until desired seed rate is achieved. If the seed rate adjusting lever gets under mark 8, you should put in a dosing-roll with smaller cells in order to achieve closer accuracy.

5.2 Changing of the dosing-roll

Remove the bearing plate for the dosing-roll by loosen the two finger screws. Now the dosing-roll can be removed. Before you push another dosing-roll over the shaft, **please remove all seed rests in the Fine Seeder.**

5.3 Maintenance

From time to time please clean the fan with compressed air. The bearing at the driving wheel has to be greased every day.

6. Adjusting Scale

Seed	Stroker - position mm	Dosing-roll type	Seed rate adjusting lever - Position	Seed rate kg / ha

7. Notes

Subject to design modifications without prior notice.